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MF APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	MF ATTORNEY DOCKET NO.
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09/371,760 08/10/99 FUNAKI

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EXAMINER

WM01/0322

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ART UNIT	PAPER NUMBER

2641
DATE MAILED:

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No. 09/371,760	Applicant(s) FUNAKI, TOMOYUKI	
	Examiner Daniel A. Nolan	Art Unit 2641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 August 1999.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12,13 and 15-21 is/are allowed.
- 6) ☒ Claim(s) 1-11 and 14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☒ The proposed drawing correction filed on 10 August 1999 is: a) ☒ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- | | |
|-------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|
| 15) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 18) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 16) <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 19) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 17) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>1</u> | 20) <input type="checkbox"/> Other: |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

- The word "canceling" is misspelled (4th line from the end of page 18).
- "Momently" is not a word (15th line on page 22).

Appropriate correction is required.

2. The Examiner suggests that the abstract of the disclosure should mention "volume" since it is a customary signal component that receives significant mention in the specification.

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested:

"Device & Method for Analyzing and Representing Sound Signals in Musical Notation."

4. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

5. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

- The term "operator member" (claim 5 line 4) is not explained in the specification.

The Examiner understands this to mean "manual function."

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. While applicant may be his or her own lexicographer, a term in a claim may not be given a meaning repugnant to the usual meaning of that term. See *In re Hill*, 161 F.2d 367, 73 USPQ 482 (CCPA 1947). The term "operator member" in claim 5 is used by the claim to mean "manual function," while the accepted meaning is a "body part."

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Kohler

10. Claims 1-5, 11 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohler (U.S. Patent 6,140,568).

11. Regarding claims 1, 11 and 14, Kohler claims all features of the claims in his claim 1, specifically claiming of *receiving signals, extracting characteristics* (decomposing) *and setting parameters*.

12. Regarding claim 2, the claim is set forth with the same limitations as claim 1. Kohler employs a MIDI converter to process *volume* (column 3 line 62) and further uses that MIDI to set *thresholds* (column 5 lines 10-12). While Kohler does not specifically mention setting a *volume threshold* because he qualifies the above referenced disclosure as examples (bottom of column 4), it would have been obvious to a person of ordinary skill in the art of signal processing at the time of the invention to put the volume

threshold detection mechanism at that point to start, continue and stop processing as shown by Kohler in figures 9 & 10.

13. Regarding claim 3, the claim is set forth with the same limitations as claim 1.

Kohler describes filtering out non-pitched content (column 3 lines 52-55). While not specifying upper and lower pitch limits, it would have been obvious to a person of ordinary skill in the art of signal processing at the time of the invention to establish limits beyond which and less than which a signal would be considered.

14. Regarding claim 4, the claim is set forth with the same limitations as claim 1.

Kohler represents a *display* in figure 2 for presenting information to the user/operator (column 10 line 41).

15. Regarding claim 5 as understood by the Examiner, the claim is set forth with the same limitations as claim 4. Kohler claims direct control of the parameters (3rd feature of claim 30) enabled by the keyboard (column 10 line 26).

Kohler & Humphrey⁷⁵ et al

16. Claims 6-10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kohler in view of Humphrey⁷⁵ et al (U.S. Patent 3,894,186).

17. Regarding claim 6, Kohler discloses the features of *Input* (addressed in response to claim 1) and *pitch extracting* (*ibid.* responding to claim 3).

Kohler further discloses the means to *determine notes* (column 3 line 47) using *pitch* with the recognizer (item 400, figure 1) in response to prior attempts (last paragraph of column 1 through column 2 line 35) more successfully (in figure 16 items 421284-421286).

Kohler does not disclose a *scale designation section* to correlate the above note determination with the values of a scale. Humphrey⁷⁵ et al explicitly assigns notes by activation of a visual device in reaction to pitch values (last paragraph of column 9). Because Kohler, Humphrey⁷⁵ et al and the immediate invention strive to present audio signals in visual form, it would have been obvious to a person of ordinary skill in the art of signal processing at the time of the invention to employ a well known coding scheme such as musical notation and its attendant scale rather than to attempt to train operators in technical representation.

18. Regarding claim 7, the claim is set forth with the same features as claim 6. While Kohler does not deal with presentation using a scale and so would not be expected to address the use of different scales, Humphrey⁷⁵ et al teaches the characteristics of the scales (in column 4 lines 42-45) as being either *diatonic* or *chromatic* of 7- or 12-tones, respectively.

19. Regarding claim 8, the claim is set forth with the same features as claim 7. While Kohler does not deal with presentation using a chromatic scale and so would not address the matter of assigning *diatonic* or *intermediate* notes. Humphrey⁷⁵ et al recognizes the possibility of implementing either scale (starting at the 6th line from the end of column 20 and in the 1st paragraph of column 24).

20. Regarding claim 9, the claim is set forth with the same features as claim 8. While Kohler does not deal with presentation on a musical scale and so would not address the matter of assigning *diatonic* or *intermediate* notes. Humphrey⁷⁵ et al recognizes that different representations could be used, changing the number of output or display elements (column 24 2nd paragraph). Furthermore, it would have been obvious to a person of ordinary skill in signal processing at the time of the invention that dealing with a signal with finite limits increasing the number of elements will narrow the intervals between them, or pitch extremes, and reducing the number of division will broaden the pitch limits.

21. Regarding claim 10, the claim is set forth with the same features as claim 6. Kohler teaches that *note length* and specific *minimums* (column 21 lines 29-32) validate a note. This *minimum note length* corresponds to the *unit* of the claim as being the lowest amount that is considered. It would have been obvious to a person of ordinary skill in signal processing at the time of the invention that the predominant basis for established equivalence scales and measures is the smallest recognizable part.

Allowable Subject Matter

22. Claims 12, 13, and 15-21 are allowed.

23. The following is a statement of reasons for the indication of allowable subject matter:

- Regarding claims 12, 15, 17, 19 and 20; the features of *input*, *pitch extracting* and the means to *determine notes* using *pitch* are the same as those for claim 6 and 3, the ability to use different scales to represent processing is neither anticipated nor has it been found in an obvious combination in the prior art of record.
- Claims 13, 16, 18 and 21 depend on claims which have been found to be allowable and so do they become allowable as a result.

24. As allowable subject matter has been indicated, applicant's reply must either comply with all formal requirements or specifically traverse each requirement not complied with. See 37 CFR 1.111(b) and MPEP § 707.07(a).

Conclusion

25. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Humphrey⁷⁷ et al (U.S. Patent 4,024,789) is an elaboration of the prior art of reference, expanded to cover more octaves and refined to provide more accurate representation along the lines of a musical scale.
- Gibson et al (U.S. Patent 5,231,671) incorporates a display that assigns notes based on pitch values (column 5 lines 3-19).
- Schroeter et al (German patent 2,351,421) provides visual display of voice or sound and discloses that the representation may be fabricated to resemble any one of a variety of forms.

26. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel A. Nolan whose telephone number is (703) 305-1368. The examiner can normally be reached on Monday, Tuesday, Thursday & Friday, between the hours of 6:30 AM and 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached at (703) 305-6137.

The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-6306 for regular communications and (703) 308-6296 for After Final communications (for informal or draft communications, please label

Art Unit: 2641

"PROPOSED" or "DRAFT"; for formal communications, please label "EXPEDITED PROCEDURE").

Any response to this action may be faxed according to the above instructions,

or mailed to: Box AF
 Commissioner of Patents and Trademarks
 Washington, D.C. 20231

or hand-delivered to: Crystal Park 2,
 2121 Crystal Drive, Arlington, VA,
 Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist at phone (703) 305-4700.

(Note that as of October 2, 2000 the former Technology Center 2700 has been split into two centers (TC 2100 and TC 2600), and former Art Unit 2741 has been designated as **Art Unit 2641**, which new AU number should be used in all future correspondence.)

Daniel A. Nolan
Examiner
Art Unit 2641

dan

March 13, 2001


Richemond Dorvil
Primary Examiner